

Claims

That which is claimed is:

1. An isolated peptide consisting of an amino acid sequence selected from the group consisting of:

(a) an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7;

(b) an amino acid sequence of an allelic variant of an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7, wherein said allelic variant is encoded by a nucleic acid molecule that hybridizes under stringent conditions to the opposite strand of a nucleic acid molecule selected from the group consisting of SEQ ID NOS:1, 3, 4, and 6;

(c) an amino acid sequence of an ortholog of an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7, wherein said ortholog is encoded by a nucleic acid molecule that hybridizes under stringent conditions to the opposite strand of a nucleic acid molecule selected from the group consisting of SEQ ID NOS:1, 3, 4, and 6; and

(d) a fragment of an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7, wherein said fragment comprises at least 10 contiguous amino acids.

2. An isolated peptide comprising an amino acid sequence selected from the group consisting of:

(a) an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7;

(b) an amino acid sequence of an allelic variant of an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7, wherein said allelic variant is encoded by a nucleic acid molecule that hybridizes under stringent conditions to the opposite strand of a nucleic acid molecule selected from the group consisting of SEQ ID NOS:1, 3, 4, and 6;

(c) an amino acid sequence of an ortholog of an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7, wherein said ortholog is encoded by a nucleic acid molecule that hybridizes under stringent conditions to the opposite strand of a nucleic acid molecule selected from the group consisting of SEQ ID NOS:1, 3, 4, and 6; and

(d) a fragment of an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7, wherein said fragment comprises at least 10 contiguous amino acids.

3. An isolated antibody that selectively binds to a peptide of claim 2.

4. An isolated nucleic acid molecule consisting of a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence that encodes an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7;

(b) a nucleotide sequence that encodes of an allelic variant of an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7, wherein said nucleotide sequence hybridizes under stringent conditions to the opposite strand of a nucleic acid molecule selected from the group consisting of SEQ ID NOS:1, 3, 4, and 6;

(c) a nucleotide sequence that encodes an ortholog of an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7, wherein said nucleotide sequence hybridizes under stringent conditions to the opposite strand of a nucleic acid molecule selected from the group consisting of SEQ ID NOS:1, 3, 4, and 6;

(d) a nucleotide sequence that encodes a fragment of an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7, wherein said fragment comprises at least 10 contiguous amino acids; and

(e) a nucleotide sequence that is the complement of a nucleotide sequence of (a)-(d).

5. An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence that encodes an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7;

(b) a nucleotide sequence that encodes of an allelic variant of an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7, wherein said nucleotide sequence hybridizes under stringent conditions to the opposite strand of a nucleic acid molecule selected from the group consisting of SEQ ID NOS:1, 3, 4, and 6;

(c) a nucleotide sequence that encodes an ortholog of an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7, wherein said nucleotide sequence hybridizes under stringent conditions to the opposite strand of a nucleic acid molecule selected from the group consisting of SEQ ID NOS:1, 3, 4, and 6;

(d) a nucleotide sequence that encodes a fragment of an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7, wherein said fragment comprises at least 10 contiguous amino acids; and

(e) a nucleotide sequence that is the complement of a nucleotide sequence of (a)-(d).

6. A gene chip comprising a nucleic acid molecule of claim 5.

7. A transgenic non-human animal comprising a nucleic acid molecule of claim 5.

8. A nucleic acid vector comprising a nucleic acid molecule of claim 5.

9. A host cell containing the vector of claim 8.

10. A method for producing any of the peptides of claim 1 comprising introducing a nucleotide sequence encoding any of the amino acid sequences in (a)-(d) into a host cell, and culturing the host cell under conditions in which the peptides are expressed from the nucleotide sequence.

11. A method for producing any of the peptides of claim 2 comprising introducing a nucleotide sequence encoding any of the amino acid sequences in (a)-(d) into a host cell, and culturing the host cell under conditions in which the peptides are expressed from the nucleotide sequence.

12. A method for detecting the presence of any of the peptides of claim 2 in a sample, said method comprising contacting said sample with a detection agent that specifically allows detection of the presence of the peptide in the sample and then detecting the presence of the peptide.

13. A method for detecting the presence of a nucleic acid molecule of claim 5 in a sample, said method comprising contacting the sample with an oligonucleotide that hybridizes to said nucleic acid molecule under stringent conditions and determining whether the oligonucleotide binds to said nucleic acid molecule in the sample.

14. A method for identifying a modulator of a peptide of claim 2, said method comprising contacting said peptide with an agent and determining if said agent has modulated the function or activity of said peptide.

15. The method of claim 14, wherein said agent is administered to a host cell comprising an expression vector that expresses said peptide.

16. A method for identifying an agent that binds to any of the peptides of claim 2, said method comprising contacting the peptide with an agent and assaying the contacted mixture to determine whether a complex is formed with the agent bound to the peptide.

17. A pharmaceutical composition comprising an agent identified by the method of claim 16 and a pharmaceutically acceptable carrier therefor.

18. A method for treating a disease or condition mediated by a human phosphatase protein, said method comprising administering to a patient a pharmaceutically effective amount of an agent identified by the method of claim 16.

19. A method for identifying a modulator of the expression of a peptide of claim 2, said method comprising contacting a cell expressing said peptide with an agent, and determining if said agent has modulated the expression of said peptide.

20. An isolated human phosphatase peptide having an amino acid sequence that shares at least 70% homology with an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7.

21. A peptide according to claim 20 that shares at least 90 percent homology with an amino acid sequence selected from the group consisting of SEQ ID NOS:2, 5, and 7.

22. An isolated nucleic acid molecule encoding a human phosphatase peptide, said nucleic acid molecule sharing at least 80 percent homology with a nucleic acid molecule selected from the group consisting of SEQ ID NOS:1, 3, 4, and 6.

23. A nucleic acid molecule according to claim 22 that shares at least 90 percent homology with a nucleic acid molecule selected from the group consisting of SEQ ID NOS:1, 3, 4, and 6.